

Operating Instructions

VHS

PAL

Video Cassette Recorder

NV-8200



 **Panasonic** /  **National**

Before attempting to connect, operate or adjust this product, please read these instructions completely.

DEAR "VIDEO HOME SYSTEM" CUSTOMER

Welcome to the "Video Home System" family of customers. It is our desire that you have many years of enjoyment from your new **VHS** Video Cassette Recorder.

From our many years of experience in the professional video recorder market, we have developed your video system recorder. However, it will only give the designed quality, reliability and performance when correctly installed. These essential installation instructions are simple and easy to accomplish if followed logically.

The NV-8200 **VHS** Video Cassette Recorder also has a number of special operating features which we have fully described in the following pages. Before operating this Video Cassette Recorder please read the instructions very carefully and thoroughly. Your new NV-8200 Video Cassette Recorder is capable of accepting only those Video Cassette Tapes bearing the **VHS** symbol.

FEATURES

1. 4 hours recording/playback possible with new type NV-E240

Thanks to the development of a new system for high-density recording of video signals, recordings as long as 4 hours in length on a single tape are possible.

2. Compact and lightweight

Simplified construction, the reduction in size of various mechanical parts, and the use of integrated circuitry has resulted in a truly compact, lightweight video cassette recorder.

3. Low power consumption

The use of new circuitry design has resulted in a significant reduction in power consumption.

4. Pause control for temporary stops

The convenient pause control has many useful applications such as instant stops during recording in order to avoid recording commercials or other unwanted material, and instant stops during playback at any desired point where you want to begin recording.

5. Feather touch function control

Feather touch non-locking push buttons permit direct mode changing (e.g. from playback to rewind) without pushing the stop button.

6. Still frame

In playback, when the Pause Button is pushed, a still frame picture will appear.

7. $\times 1/5 \sim \times 1.5$ Speed Playback

By pushing the Slow-Fast Button and adjusting the Play Speed Control, a variable speed picture (about $1/5 \sim 1.5$ times normal) can be obtained.

8. Double speed playback picture

A double speed playback picture can be obtained by pushing the Double Speed Button.

9. Stereophonic sound

Two audio tracks permit recording from two microphones, pre-amplified stereo phonograph, etc. for playback in stereo sound, or for bilingual source material.

10. Auto Rewind/Memory Auto Rewind/Repeat

If the tape is allowed to reach its end during recording or playback, the recorder will automatically rewind or by setting the tape memory, the recorder will conveniently rewind to any desired point for subsequent playback. Or playback the tape repeatedly from the tape beginning to counter position "000".

11. Timer Rec/Play

The general type of timer permits automatic recording and playback at any preselected time.

12. Optional Accessories

Remote control

A remote controller NV-A810, can be used to control the recorder from a distance.

Auto search control

Using the auto search controller NV-A800, a program on the tape can be selected and played back automatically.

Simple editing

The NV-8200 can be performed by using the NV-A820 in conjunction with the NV-A950 Editing Controller or by direct connection to the NV-A960 Editing Controller.

RF converter

With the optional RF converter, the output of the recorder can be viewed on any conventional TV set.

* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

IMPORTANT

"Unauthorized recording of copyrighted television programmes, films, video tapes and other materials may infringe the right of copyright owners and be contrary to copyright laws."

WARNING

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.



PRECAUTIONS

- Before trying to operate the unit, make sure that the Timer Switch on the front panel is OFF.
- Avoid operating or leaving the unit near strong magnetic fields. Be especially careful of large audio speakers.
- Avoid operating or storing the unit in an excessively hot, cold, or damp environment as this may result in damage both to the recorder and to the tape.
- Do not block the ventilation slots on the top and bottom of the unit.
- Use this unit horizontally and do not put anything on top of this unit.

- If this unit is suddenly moved from a cold place to a warm place, moisture may form inside which may cause damage both to the tape and the unit. Avoid such sudden changes in temperature if possible. If moisture is present inside the unit the MOIST Lamp will light up when the power is ON. While the lamp is alight the unit WILL NOT operate. Let the unit remain at room temperature with power ON until the MOIST lamp is no longer alight.
- Keep the unit away from flower vases, etc. If liquids should be spilled into the unit serious damage will be caused. If you spill any liquid into the unit consult qualified service personnel.
- Do not spray any cleaner or wax directly on the unit.

TABLE OF CONTENTS

DEAR "VIDEO HOME SYSTEM" CUSTOMER	1
FEATURES	1
PRECAUTIONS	2
FOR YOUR SAFETY	3
A WORD ABOUT THE CASSETTE	3
MAJOR OPERATING COMPONENTS	4
OPERATING COMPONENTS AND THEIR FUNCTIONS	5
USE OF THE NV-8200 WITH A TV/VIDEO MONITOR	7
USING THE NV-8200 WITH AN OPTIONAL VIDEO CAMERA	11
AUDIO DUBBING	13
HOW TO RECORD TV PROGRAMMES BY USING A CLOCK TIMER	15
HOW TO PLAY BACK BY USING A CLOCK TIMER	17
DESCRIPTION OF PAUSE AND PLAYBACK OPERATIONS	18
DESCRIPTION OF SPECIAL FUNCTIONS	19
USING THE OPTIONAL ACCESSORIES	21
VIDEO HEAD CLOGGING	24
BEFORE REQUESTING SERVICE	24
SPECIFICATIONS	26

FOR YOUR SAFETY

1. THIS APPARATUS MUST BE EARTHED.

To ensure safe operation the three-pin plug supplied must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring.

Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities.

The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe. For your safety, if in any doubt about the effective earthing of the power point, consult a qualified electrician.

2. DO NOT REMOVE PANEL COVER BY UNSCREWING.

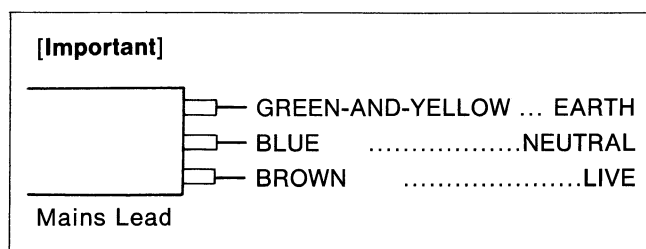
To prevent electric shock, do not remove cover. No user serviceable parts inside. And do not insert fingers or any other objects into the video cassette holder.

3. VOLTAGE SELECTOR SETTING.

The power cord of this unit must be disconnected from mains before the voltage selector is changed.

4. AC POWER CORD CONNECTION. (NV-8200-B only)

The wires in mains lead for this apparatus are coloured in accordance with the following code.



As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol $\perp$ or coloured GREEN or GREEN-AND-YELLOW.

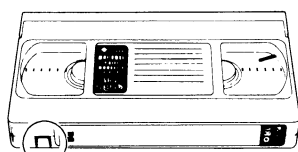
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured red.

A WORD ABOUT THE CASSETTE

■ Types of Cassette Tape

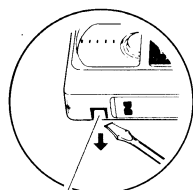
Type	Playing Time
NV-E240	4 Hrs.
NV-E180	3 Hrs.
NV-E120	2 Hrs.
NV-E60	1 Hr.



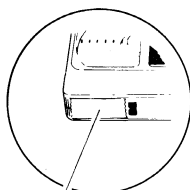
Tab

To prevent accidental erasure

To record again



Break off the tab with a screwdriver



Cover the hole with adhesive tape

In addition to the tapes specified, the recorder will accept any cassette tape which has the **VHS** mark.

■ The video cassette can only be used with the window side up, and arrow pointing away from you. Do not attempt to insert a cassette which is upside down or backwards.

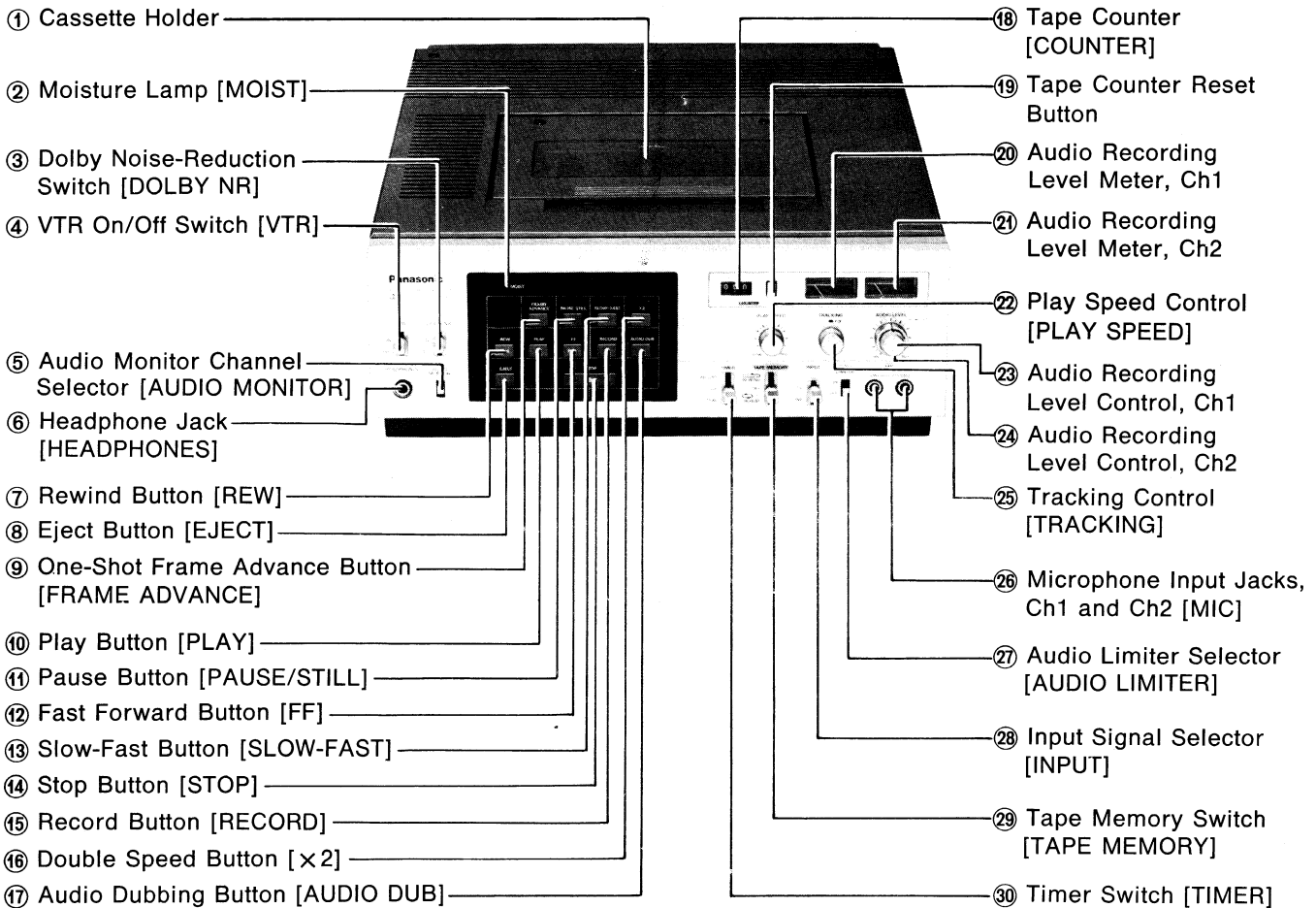
■ You can prevent the accidental erasure of recorded material by breaking off the tab on the cassette's rear side using a small screwdriver or other suitable object. Afterwards, the tape can only be played back. To record again on a cassette that has a tab removed, simply cover the hole with adhesive tape as shown below.

■ Avoid storing the cassette in the following places.

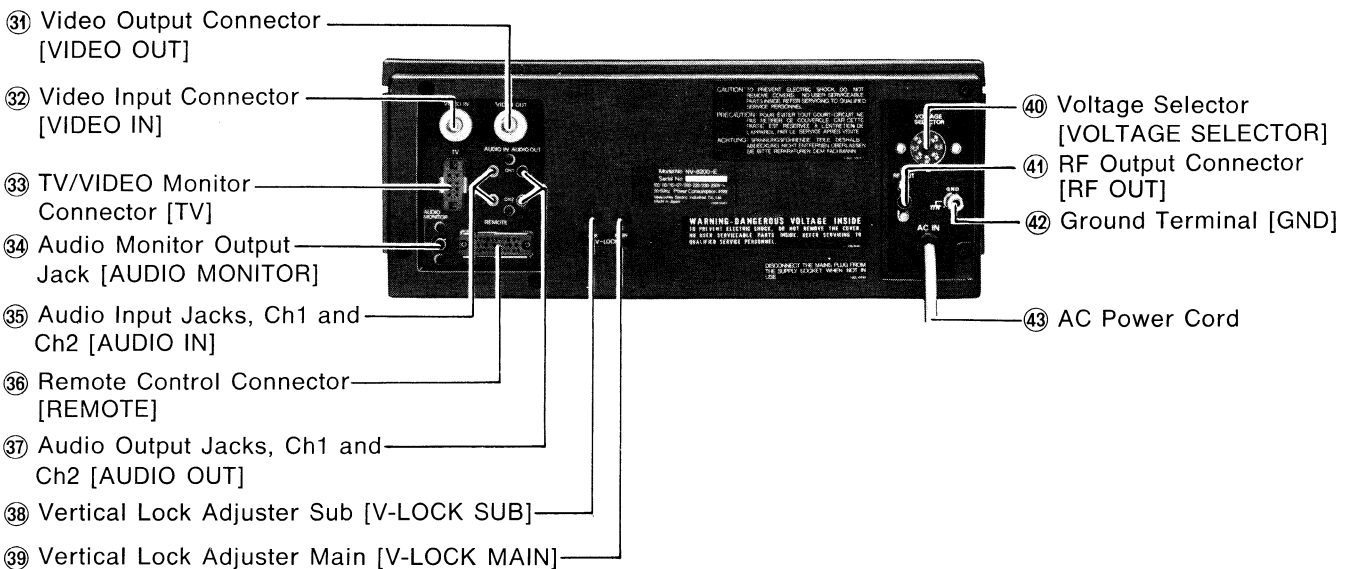
- extremely hot, cold, dusty, or damp places,
- in direct sunlight or near sources of heat,
- places subject to shocks or strong vibrations, and,
- near strong magnetic fields such as generated by a motor, transformer, speaker, etc.

MAJOR OPERATING COMPONENTS

TOP and FRONT



REAR



OPERATING COMPONENTS AND THEIR FUNCTIONS

TOP and FRONT

① **Cassette Holder**

For insertion of the video cassette.

② **Moisture Lamp [MOIST]**

This lamp lights up if moisture is present inside the recorder.

When this lamp is on, the recorder will not operate until it has dried sufficiently.

③ **Dolby Noise-Reduction Switch [DOLBY NR]**

When set to the "IN" position during recording and playback, the audio noise-reduction circuitry will function, giving recording and playback sound with less noise. See page 20.

④ **VTR On/Off Switch [VTR]**

This switch is used to turn the recorder on and off.

• Aven om denna omkopplare är i "OFF"-läge, har fortfarande en del av apparaten nätspänning. Kontrollera att ni tar ut nätsladden ur vägguttaget innan ni skruvar bort skyddshöljerna.

• Selv om denne omskifter er i "OFF" stilling, tilføres en del af apparatet stadig strøm. Sørg for at tage netledningen ud af stikkontakten inden De tager bagsidepladen af ved at skruue den af.

⑤ **Audio Monitor Channel Selector [AUDIO MONITOR]**

This switch selects which audio channel is monitored during recording and playback. It does not affect the recorded audio signal.

CH1: Audio channel 1 can be monitored on the TV or through Audio Monitor Output Jack ③④.

CH2: Audio channel 2 can be monitored on the TV or through Audio Monitor Output Jack ③④.

MIX: Mixed sound from both channel 1 and channel 2 can be monitored on the TV or through Audio Monitor Output Jack ③④.

⑥ **HEADPHONE JACK [HEADPHONES]**

Permits listening by headphones to each channel or both audio channels simultaneously, by selecting Audio Monitor Channel Selector ⑤.

⑦ **Rewind Button [REW]**

Push this button to rewind the tape. When in rewind, the tape will stop automatically when fully rewound, or at the counter "999" position, with the Tape Memory Switch ②⑨ set to "REWIND".

⑧ **Eject Button [EJECT]**

Push this button to raise the cassette holder to either insert or remove a cassette.

⑨ **One-Shot Frame Advance Button [FRAME ADVANCE]**

During a still picture, push this button to advance the picture by one frame at a time.

⑩ **Play Button [PLAY]**

Push this button to play back a recorded tape. If recording is desired, push the Play Button and the Record Button ⑮ simultaneously.

⑪ **Pause Button [PAUSE/STILL]**

Push this button to instantly stop the tape movement in either the record or playback modes. The tape will not unload, but its forward movement will stop. A still frame picture will appear in the playback mode, a one-shot picture can also be obtained. No still picture will appear in the pause-record mode, just the input signal will be seen. Push the Pause Button again to release pause. See page 18 for details.

⑫ **Fast Forward Button [FF]**

Push this button to quickly move the tape in the forward direction.

⑬ **Slow-Fast Button [SLOW-FAST]**

Push this button to start slow-fast motion. The slow-fast speed can be varied from 1/5 to 1.5 times normal motion by adjusting the Play Speed Control ②②.

⑭ **Stop Button [STOP]**

Push this button to stop the Recording, Playback, Rewind, Fast Forward, or Audio Dubbing mode.

⑮ **Record Button [RECORD]**

This button should be pushed simultaneously with the Play Button ⑩ to start recording both picture and sound.

⑯ **Double Speed Button [×2]**

Push this button to obtain a double speed playback picture.

⑰ **Audio Dubbing Button [AUDIO DUB]**

During playback, audio dub may be started by pushing Play Button ⑩ and Audio Dub Button at the same time. This is handy when it is desired to narrate over a prerecorded tape. (Channel 2 only is used for DUB.) See page 13.

⑱ **Tape Counter [COUNTER]**

This is a digital counter which gives a reference to how far the tape has moved.

⑲ **Tape Counter Reset Button**

Press this button to reset the Tape Counter ⑱ to "000".

⑳ **Audio Recording Level Meter, Ch1**

This meter shows the audio Ch1 recording level.

㉑ **Audio Recording Level Meter, Ch2**

This meter shows the audio Ch2 recording level.

㉒ **Play Speed Control [PLAY SPEED]**

Slow-fast speed can be varied from 1/5 to 1.5 times normal motion by this control when the Slow-Fast Button ⑬ is pushed.

②③ Audio Recording Level Control, Ch1

Audio recording level for Channel 1 is manually adjusted by this control.

Should be adjusted so that the Audio Level Meter, Ch1 ②④ indicates 0 dB on peaks.

②④ Audio Recording Level Control, Ch2

Audio recording level for Channel 2 is manually adjusted by this control.

Should be adjusted so that the Audio Level Meter, Ch2 ②⑤ indicates 0 dB on peaks.

②⑤ Tracking Control [TRACKING]

This control is used to shift playback scanning of the tape.

Normally, it is left in the "FIX" position. It should only be adjusted if, upon playback, the picture appears very noisy or streaked.

②⑥ Microphone Input Jacks, CH1 and CH2 [MIC]

This is for the connection of a microphone to record sound onto the tape. It can be used both in recording and for audio dubbing.

②⑦ Audio Limiter Selector [AUDIO LIMITER]

If the dynamic range of the audio signal to be recorded is very wide, set this switch ON to provide automatic limiting of the signal peaks.

②⑧ Input Signal Selector [INPUT]

This switch is used to select between 2 incoming signals from which recordings can be made.

1) In the "TV" position, the signal which is connected to the TV/VIDEO Monitor Connector ③③ will be sent to the recording circuit.

2) In the "LINE" position, the signal which is connected to the Video Input Connector ③② will be sent to the recording circuit.

②⑨ Tape Memory Switch [TAPE MEMORY]

REWIND: For automatic Tape Counter ①⑧ "999" operation, see page 19.

OFF: For ordinary use of the unit when set to this position.

REPEAT: For automatic repeat during start and Tape Counter ①⑧ "000" operation, see page 19.

③① Timer Switch [TIMER]

REC: For recording with the timer, see page 15.

OFF: Normally set to this position.

PLAY: For playback with the timer, see page 17.

REAR

③① Video Output Connector [VIDEO OUT]

For direct connection to a video monitor. Not used with a conventional TV receiver.

③② Video Input Connector [VIDEO IN]

For connection of a video camera or other input video signal to be recorded.

③③ TV/VIDEO Monitor Connector [TV]

For connection of a TV/VIDEO monitor (having an 8-pin terminal) by using a VTR-Monitor connection cable (supplied).

③④ Audio Monitor Output Jack [AUDIO MONITOR]

For connection to an audio amplifier. Or audio input of a TV monitor unit to allow monitoring of channel 1 or channel 2 or mix audio, as selected by Audio Monitor Channel Selector ⑤.

Note:

TV sound cannot be heard if stereo equipment is connected to the Audio Monitor Output Jack and a short-circuit condition is created, but this is not a malfunction.

③⑤ Audio Input Jacks, CH1 and CH2 [AUDIO IN]

Used to record line level signals from an audio tape recorder or radio or record player (phono type terminal).

③⑥ Remote Control Connector [REMOTE]

For connection of optional remote controller (NV-A810) or auto search controller (NV-A800).

If the interface adaptor (NV-A820) is connected, tape editing can be simply accomplished.

Refer to pages 21 and 22.

③⑦ Audio Output Jacks, CH1 and CH2 [AUDIO OUT]

For connection to a stereo amplifier, etc.

③⑧ Vertical Lock Adjuster Sub [V-LOCK SUB]

If vertical "jitter" of still pictures cannot be corrected by adjusting the Vertical Lock Adjuster Main ③⑨, remove the rubber cap and turn the control clockwise, by using a screwdriver.

Then adjust the Vertical Lock Adjuster Main once again.

③⑨ Vertical Lock Adjuster Main [V-LOCK MAIN]

Vertical "jitter" may be caused, during still picture playback, as a result of the connections between this unit and the TV set. To correct this, remove the rubber cap, and make the adjustment by using a screwdriver.

④① Voltage Selector [VOLTAGE SELECTOR]

Turn the voltage selector dial and set the local voltage indication to the triangle marks in white.

Voltage indication: 100-110/115-127/200-220/230-250 V AC. See page 7.

④① RF Output Connector [RF OUT]

This connects to the antenna terminal (COAXIAL type) of a conventional TV receiver.

④② Ground Terminal [GND]

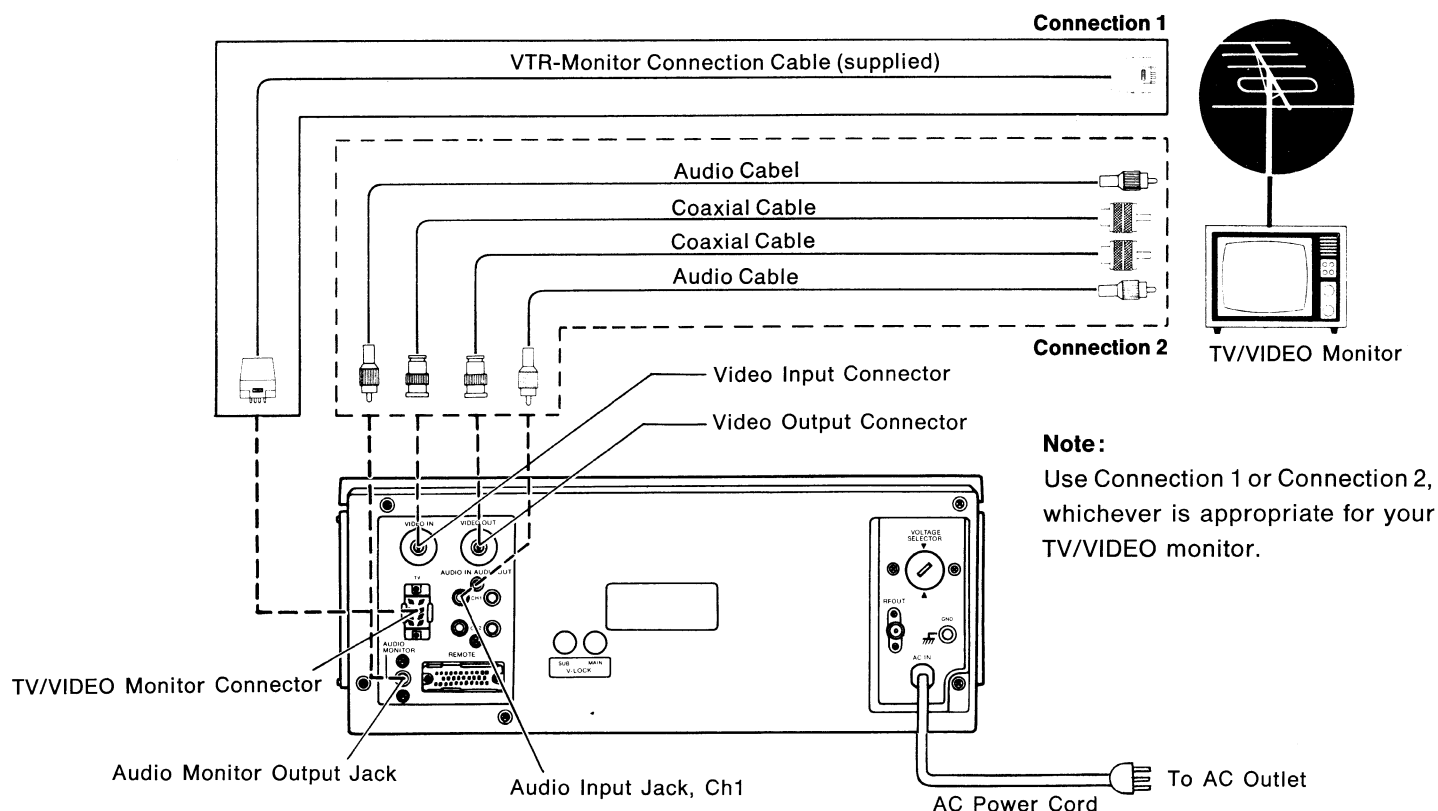
Connect to external ground, if audio hum or buzz is heard while monitoring or playback.

④③ AC Power Cord

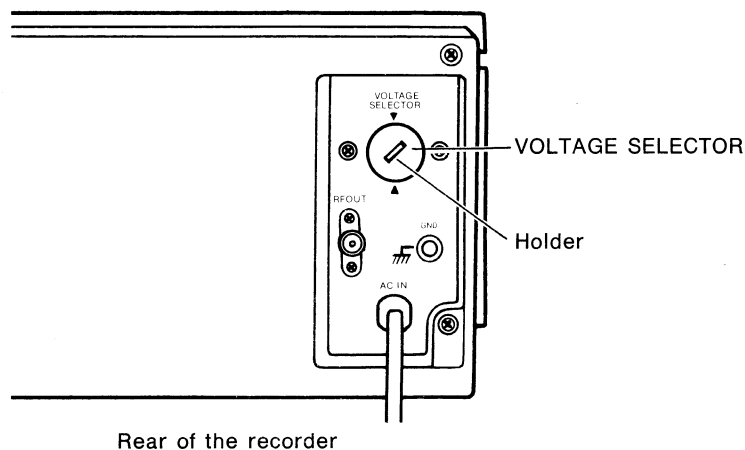
USE OF THE NV-8200 WITH A TV/VIDEO MONITOR

CONNECTION DIAGRAM

1. Connect the NV-8200 to your TV/VIDEO monitor as described in this section.



SETTING THE VOLTAGE SELECTOR



NV-8200 recorder is preset to 200–220 V or 230–250 V at the factory.

Before connecting to the power supply, ensure that the selector on the rear should be selected to the same voltage as your local power supply. NV-8200 can be used on either 100–110 V, 115–127 V, 200–220 V or 230–250 V AC.

To adjust the voltage setting proceed as follows:

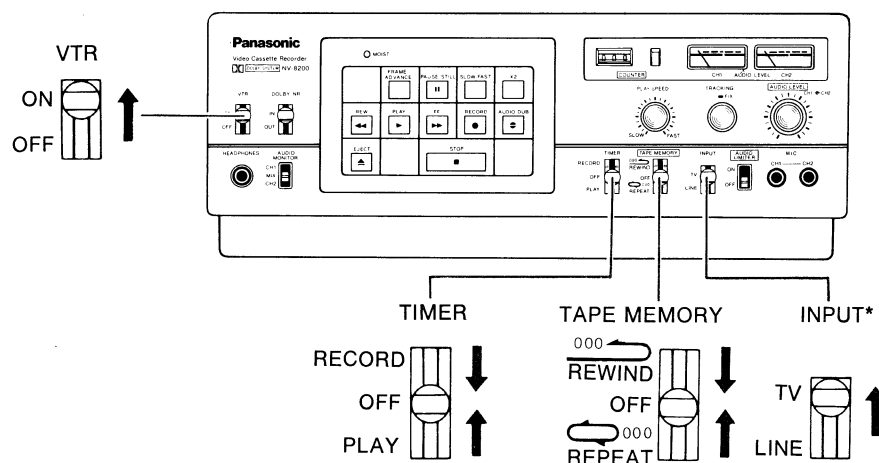
1. Ensure that the mains lead is disconnected from the mains supply.
2. Turn the fuse holder by using a thin driver.

OPERATING PROCEDURE

- After connection, turn power on to the TV/VIDEO monitor and set the switches on the recorder as shown here.

Notes:

When there is no cassette in the recorder and the VTR On/Off Switch is turned ON, the Cassette Holder will automatically raise.

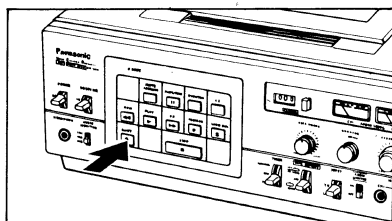


* INPUT:

TV—Use this position with Connection 1 as described above.
LINE—Use the position with Connection 2 as described above.

3. Insert the cassette tape

(1) Push the Eject Button

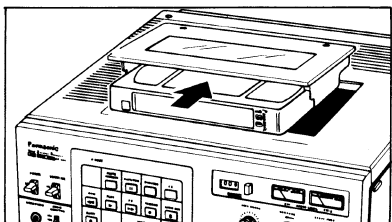


Push the Eject Button and the Cassette Holder will rise.

Note:

This will also occur when the VTR On/Off Switch is turned ON if no cassette is in the recorder.

(2) Insertion of the cassette tape

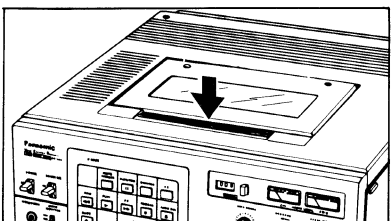


Insert the cassette tape fully into the Cassette Holder.

Notes:

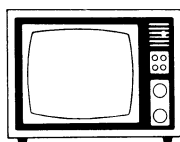
- The video cassette can only be used with the window side up, and arrow pointing away from you.
- Make sure the tab has not been removed from the back side of the cassette. If the tab has been removed no recording can be made. (See page 3.)

(3) Lower the cassette holder for operation



Press the Cassette Holder down until it locks in position.

4. Tuning of TV/VIDEO monitor

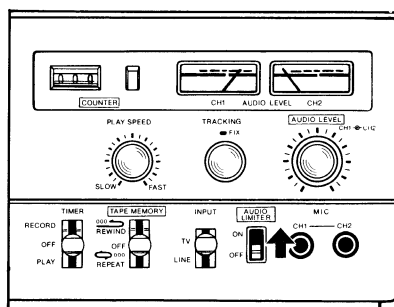


If the TV/VIDEO monitor has an AFC switch, turn it to the "OFF" position.

Adjust the fine tuner as necessary to obtain the best picture.

Now turn the AFC switch "ON".

5. Adjustment of the audio (CH1) level



When connection 1 is used:

When recording from TV monitor, the audio is recorded on channel 1 only.

Therefore only Audio (ch 1) Recording Level Control needs to be adjusted. Adjust so the Audio (ch 1) Level Meter rarely indicates beyond 0 dB on peaks.

The indication needle of the Audio Recording Level Meter (ch 2) will not move.

Audio Limiter Selector

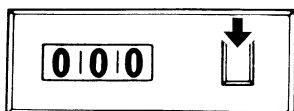
ON: To minimize distortion from peak levels set Audio Limiter Selector to "ON". This permits the average level to be set higher for better signal to noise ratio.

OFF: This permits maximum dynamic range to be recorded, but the level must be set low enough so that peaks do not cause objectionable distortion.

When connection 2 is used:

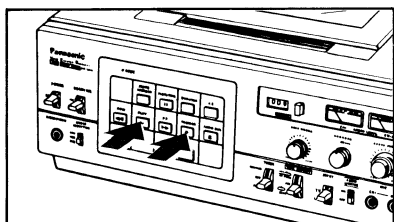
If the Audio Input Jacks are used, the audio cable from the monitor TV can be connected to either channel 1 or channel 2, but it is recommended that the connections be made to channel 1 if possible, because only channel 2 can be used for audio dubbing. Operation is the same as described in the section "When connection 1 is used".

6. Reset the counter



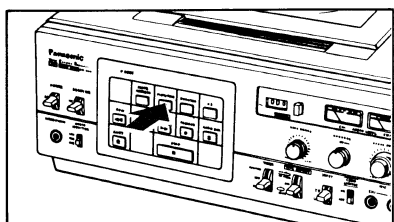
Press the Tape Counter Reset Button to reset the counter to "000". This is done to make finding the beginning of the recording much easier.

7. Recording



Push the Record Button and the Play Button at the same time. Now both audio and video recording is being performed. When the tape reaches its end, it will automatically be rewound to its start by the automatic-rewind system.

8. Pause

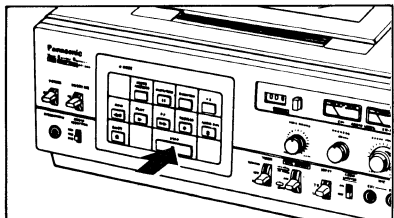


During recording, it is possible to instantly stop the tape, thus stopping the recording. To do this, push the Pause Button once. Now the tape is stopped. To resume recording, push the Pause Button again.

Note:

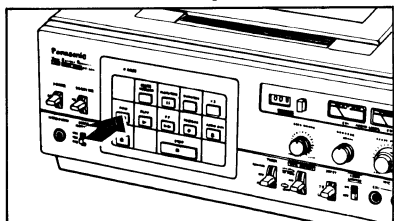
The unit will automatically release from pause after approx. 5 minutes, and go into the stop mode, to protect the tape.

9. Stop recording



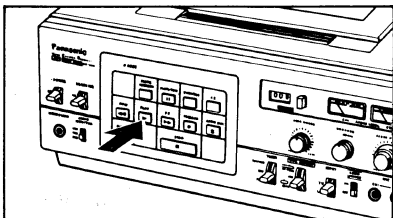
To stop the recording, push the Stop Button.

10. Rewind the tape



To rewind the tape, push the Rewind Button. (Refer to page 19 for information concerning automatic rewind and automatic repeat.)

11. Playback the tape

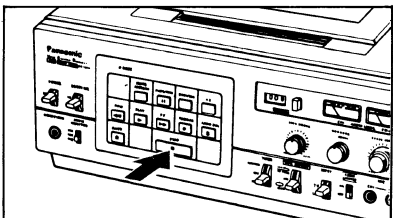


Push the Play Button to play back a recorded tape on the TV/ VIDEO monitor. For a still picture, frame advance, slow-fast motion or double speed picture, see page 18.

Note:

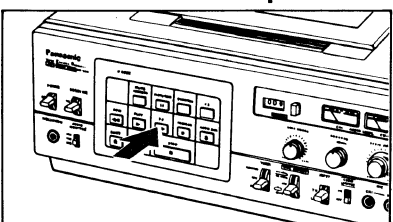
The playback can only be as good as the reception at the time of recording. If there was interference or noise in the original reception, it will be recorded and seen during playback.

12. Stop playback



To stop playback, push the Stop Button.

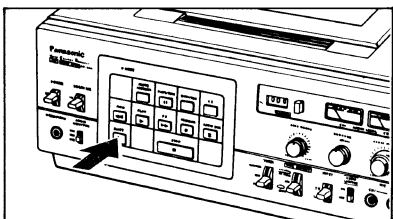
13. Fast forward the tape



The Fast Forward Button can be used to rapidly advance the tape to the desired portion for playback or recording.

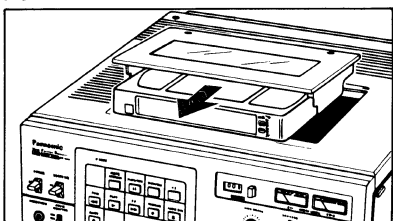
14. Eject the cassette tape

(1) Push the Eject Button



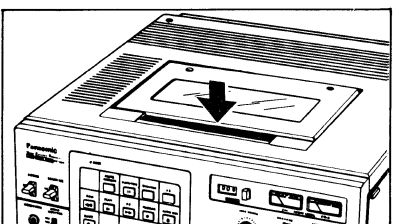
To exchange or remove a video cassette push the Eject Button and the Cassette Holder will rise for easy removal of the cassette tape.

(2) Remove the video cassette tape



After the Cassette Holder has risen completely, remove the video cassette tape.

(3) Lower the Cassette Holder



Press the empty cassette holder down until it locks in position to protect the inside of the recorder from dust and dirt.

USING THE NV-8200 WITH AN OPTIONAL VIDEO CAMERA

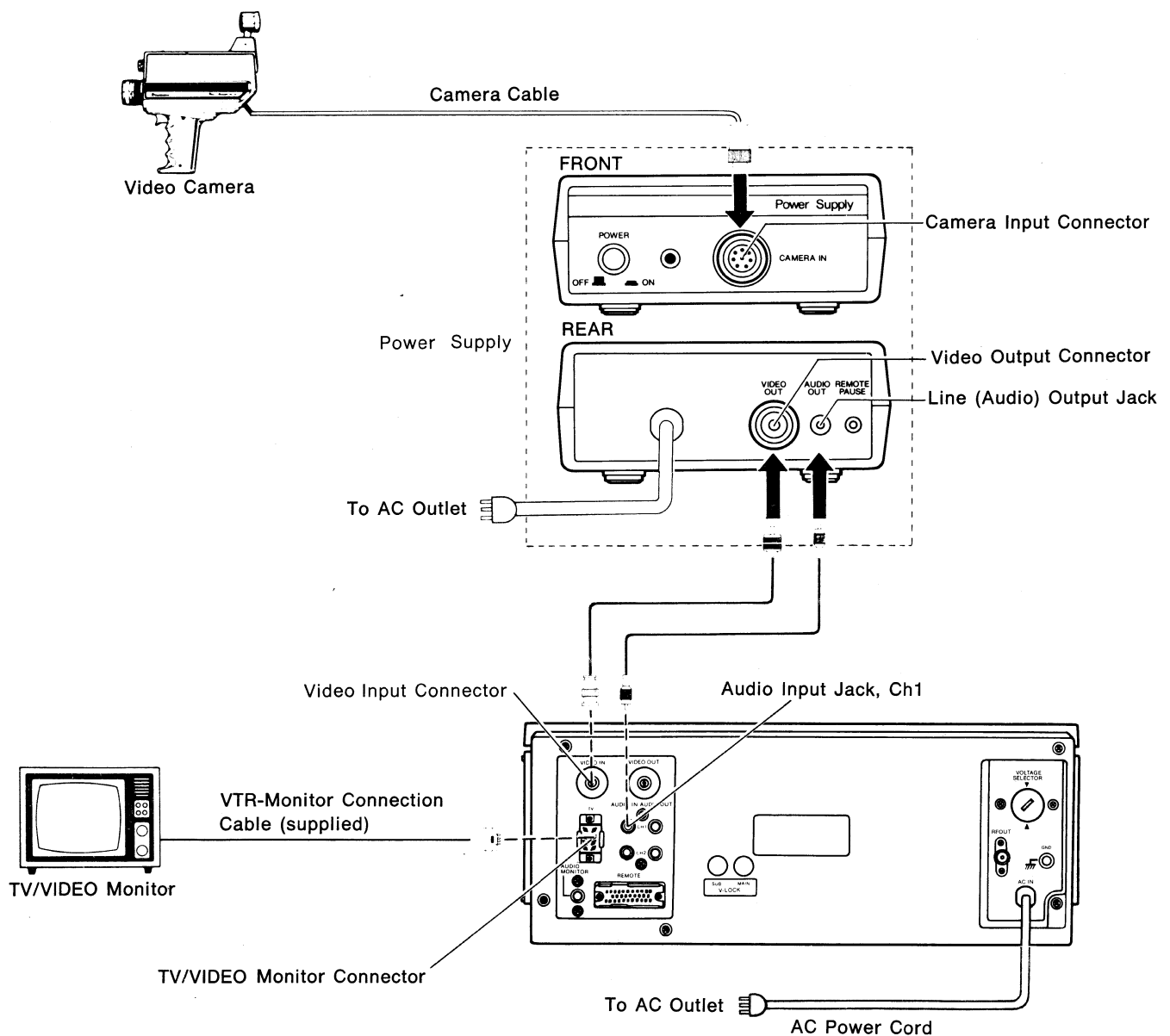
The NV-8200 may be used with an optional video camera.

The connection diagrams are shown, but for best results, please refer to the operating instructions of the camera you are using.

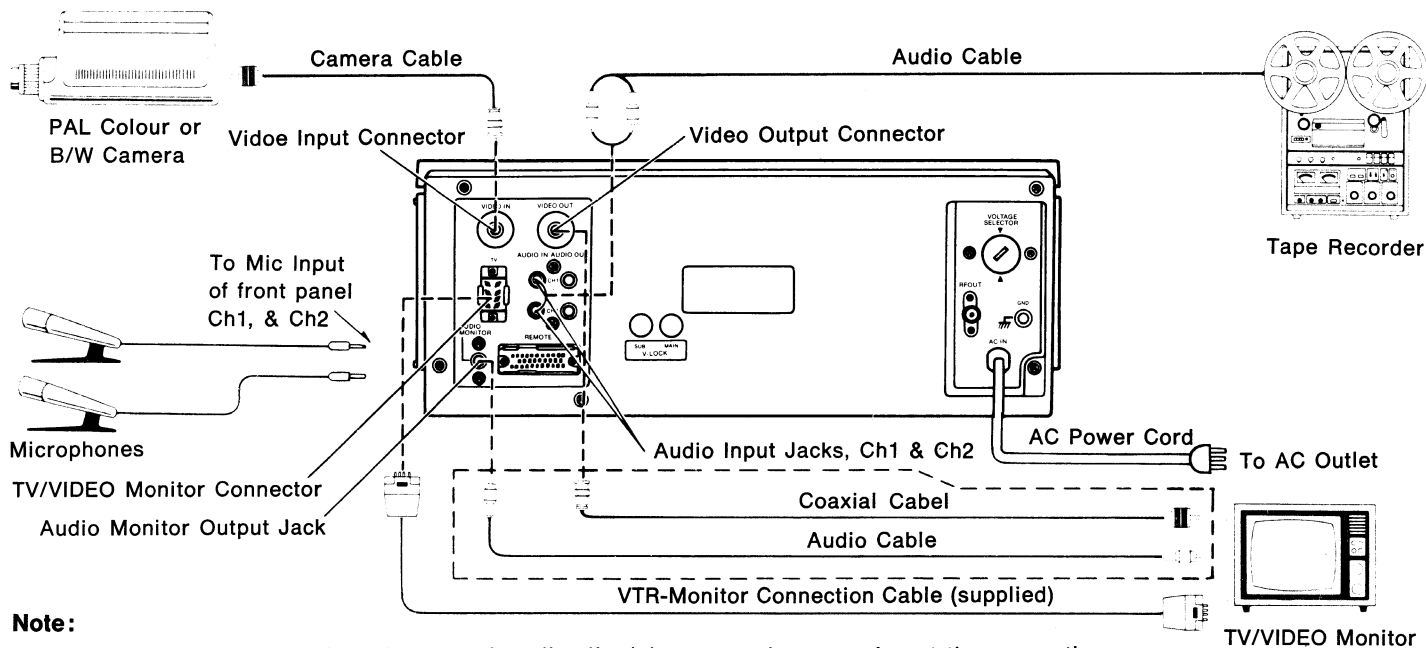
Notes:

- The Input Signal Selector must be on "LINE".
- Do not connect both the microphone and audio (line) inputs to the recorder to the same channel. If this is done, just the microphone will be recorded.

CONNECTION DIAGRAMS



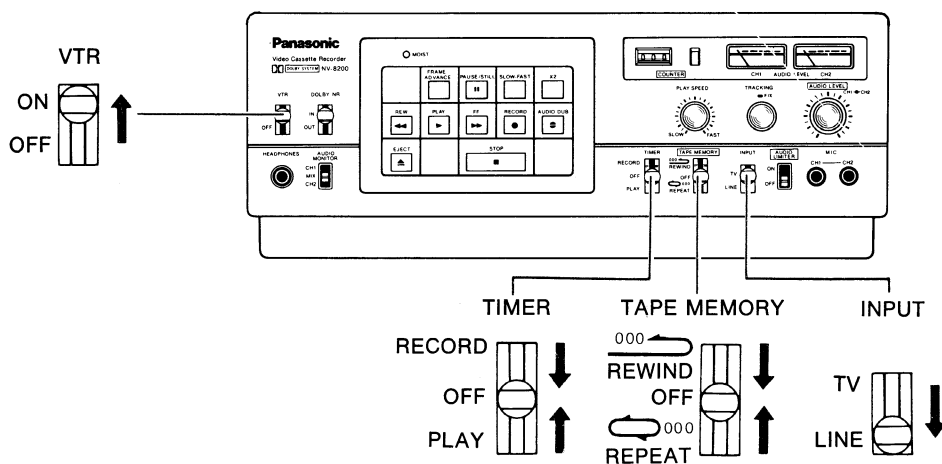
Using the NV-8200 with another type video camera



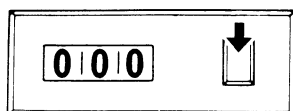
1. Connect the camera, and the TV to the recorder as shown in the connection diagram.
2. Set the switches on the recorder as shown here.

Note:

When there is no cassette in the recorder and the VTR On/Off Switch is turned ON, the Cassette Holder will automatically raise.



3. Turn the power switch of the camera and TV to ON.
4. Insert a cassette tape according to the procedure on page 8.
5. Adjust the audio (CH1) and/or audio (CH2) recording level.
6. Reset the counter.



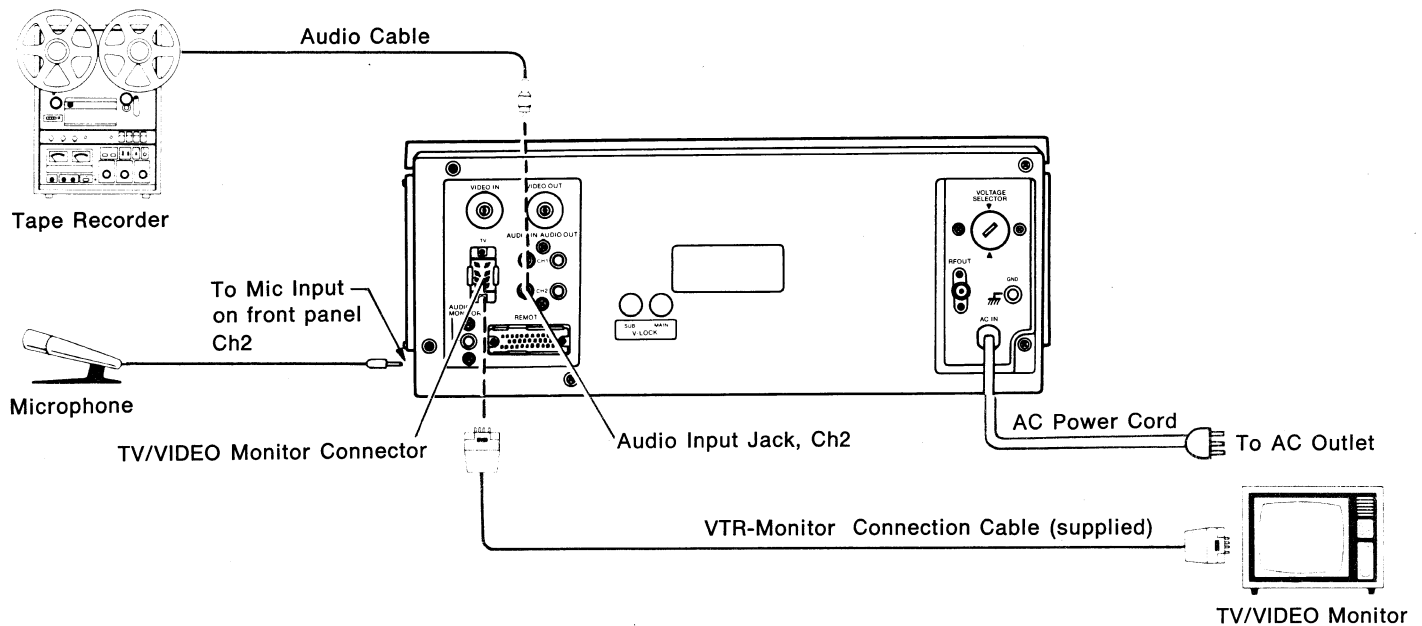
Press the Tape Counter Reset Button to reset the counter to "000". This is done to make finding the beginning of the recording much easier.

7. Perform RECORDING, PLAYBACK, PAUSE, REW, FF, and STOP as desired according to page 9.
8. The signal being recorded can be monitored during recording by viewing the TV set.

AUDIO DUBBING

Audio dubbing allows an audio Channel 2 recording to be made on a pre-recorded tape. In this way, pre-recorded video and audio Channel 1 will not be disturbed.

CONNECTION DIAGRAM



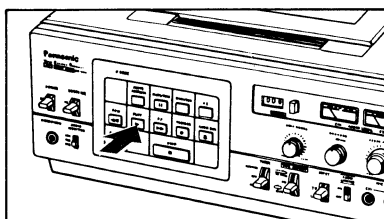
Notes:

- Audio dubbing can be made on audio Ch2 only. Although channel 2 sound can be heard from channel 1 during audio dubbing (if the sound is monitored), no recording will be made on audio channel 1.
- Avoid having a microphone connected to the Mic Input Jack on the front panel at the same time that an audio signal is connected to the Audio Input Jack. If this happens, just the microphone will be recorded.
- If the tab is removed from the back side of the video cassette, no audio dubbing can be made.
- If using the microphone for dubbing, do not get it near the speaker on the TV while the dub is being made. A howling noise (feedback) may occur.
- No audio dubbing can be made even when VTR-monitor connection cable is used.

1. Connect the recorder as shown above.
2. Set the Input Signal Selector



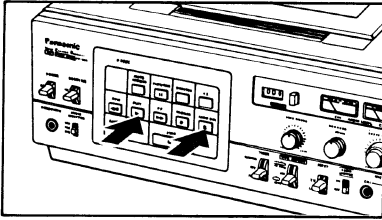
3. Push the Play Button



Set the Input Signal Selector to the "LINE" position, if it is desired to record from a signal applied to the Audio (Line) Input Jack.

Playback the tape onto which you want to place the audio dubbing.

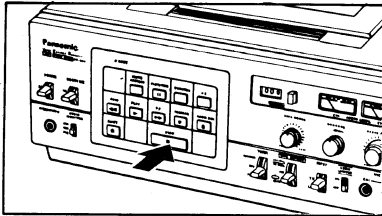
4. Push the Play and Audio Dub Button at any desired part



When it is desired to start the audio dub push the Play and Audio Dub Buttons at the same time.

Now only the new audio is being recorded onto the tape. The video will remain unchanged, and can be viewed on the TV as the audio dub is being made.

5. Stop audio dubbing



Push the Stop Button. The audio dubbing will stop.

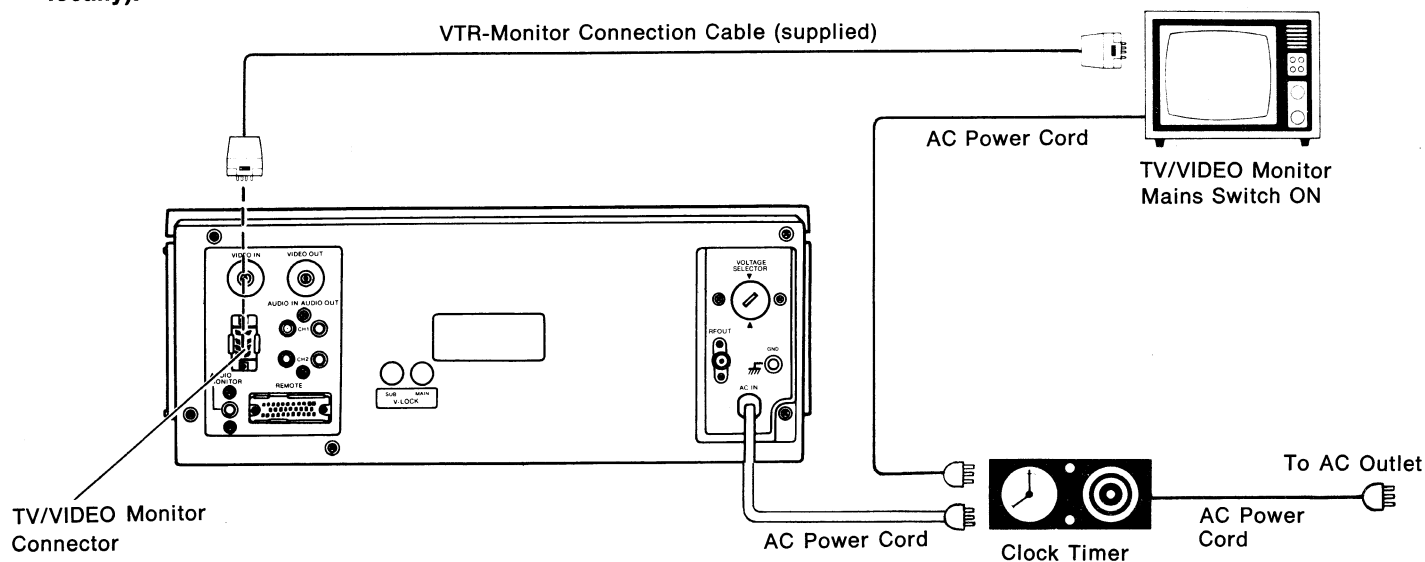
Note:

If you want to check the audio signal before making a dub, you can do so by pushing the Audio Dub Button only. Now you can hear on your TV the signal from the microphone or other source.

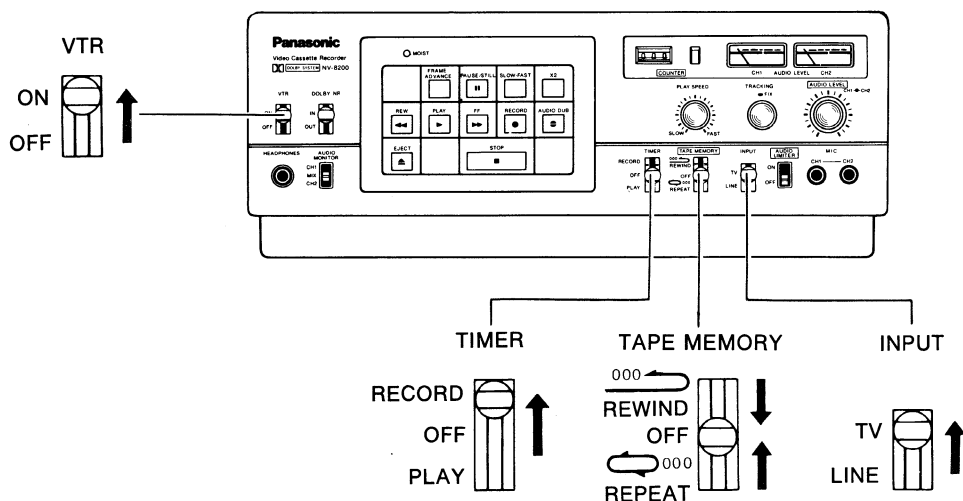
HOW TO RECORD TV PROGRAMMES BY USING A CLOCK TIMER

CONNECTION DIAGRAM

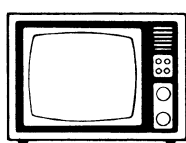
1. Connect the TV/VIDEO monitor to the recorder as shown here.
2. Connect AC power cord of the timer to AC outlet.
3. Set timer at desired time (Refer to the operating instructions for the timer. The timer should be purchased locally).



4. Set the switches on the recorder as shown here.

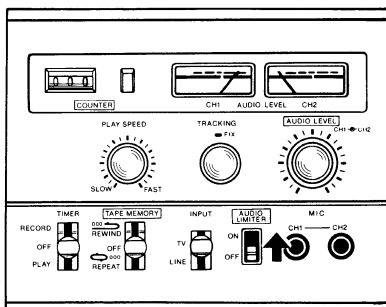


5. Insert a cassette tape according to the procedure on page 8.
6. Tuning of TV/VIDEO monitor.



If the TV/VIDEO monitor has an AFC switch, turn it to the "OFF" position.
Adjust its fine tuner as necessary to obtain the best picture.
Now turn the AFC switch ON.

7. Adjustment of the audio (CH1) level



Adjust Audio (ch1) Recording Level Control so the Audio (ch1) Level Meter rarely indicates beyond 0 dB on peaks.

Audio Limiter Selector

ON: To minimize distortion from peak levels set Audio Limiter Selector to "ON" position. This permits the average level to be set higher for better signal to noise ratio.

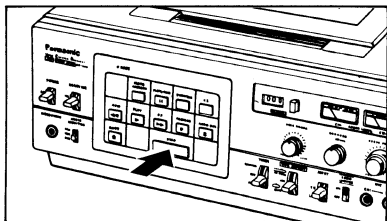
OFF: This permits maximum dynamic range to be recorded, but the level must be set low enough so that peaks do not cause objectionable distortion.

8. Recording at the pre-set time

At the pre-set time, the power will be automatically turned on and the tape starts moving in the recording mode. When the tape reaches its end, it will automatically be rewound to its beginning and will then stop automatically.

Notes:

■ Stop timer recording



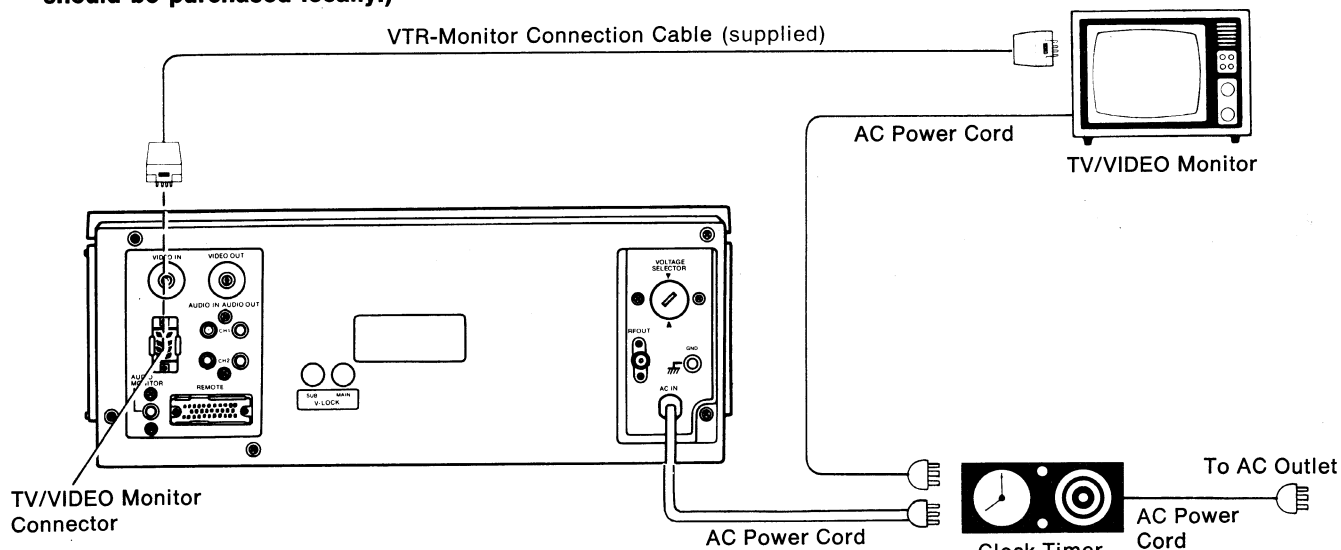
The tape can be stopped before it reaches its end, if desired, by pushing the Stop Button.

- Be certain the Power Switches of this unit and TV are on.
- If the power is for any reason interrupted while making a timer recording, the recording won't continue even if the power is subsequently resumed.
- The timer used should be the type which has power turn-off after the timer recording has finished.
- Continuous recordings cannot be made by using the timer.
- Avoid timer recordings while the Auto Search Controller (optional) remains connected.
- The power will be turned off while the tape is moving, during timer recording, when the timer turn-off time is reached; but the tape will remain loaded around the cylinder of this unit. To protect the tape, therefore, be sure to set the timer to turn off at a time which is about 10 minutes after the tape will end. If, for example, NV-E120 tape is used, the turn-off time should be about 130 minutes after recording starts.

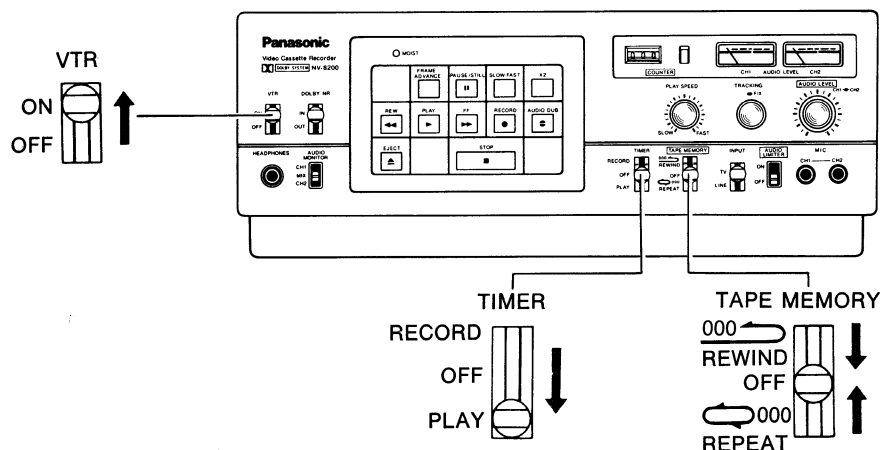
HOW TO PLAY BACK BY USING A CLOCK TIMER

CONNECTION DIAGRAM

1. Connect the TV to the recorder as shown here.
2. Connect AC power cord of the timer to AC outlet.
3. Set the timer so it provides power at desired time. (Refer to the operating instructions for the timer. The timer should be purchased locally.)



4. Set the switches on the recorder as shown here.



5. Insert a recorded video cassette tape according to the procedure on page 8.
6. Playback at the pre-set time.

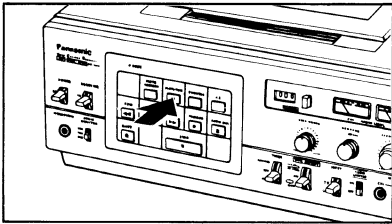
At the pre-set time, the timer will provide power to both TV and VTR, and playback will begin. When the tape reaches its end, it will automatically be rewound to its beginning and will then stop automatically.

Notes:

- Timer playback can be stopped before it reaches its end, if desired, by pushing the Stop Button.
- Be certain the Power Switches of this unit and TV are on.
- If during timer playback the power is cut off, timer playback operation will not resume when the power is restored. In this case, to resume playback, manually push the Play Button after the power is restored.
- Tape memory switch will also function during timer operation if so desired.
- The timer used should be the type which has power turn-off after the timer playback has finished.
- Continuous playback cannot be made by using the timer.
- Avoid timer playback while the Auto Search Controller (optional) remains connected.
- The power will be turned off while the tape is moving, during timer playback, when the timer turn-off time is reached; but the tape will remain loaded in the cylinder of this unit. To protect the tape, therefore, be sure to set the timer to turn off at a time which is about 10 minutes after the tape will end. If, for example, NV-E120 tape is used, the turn-off time should be about 130 minutes after playback starts.

DESCRIPTION OF PAUSE AND PLAYBACK OPERATIONS

USING PAUSE DURING RECORD

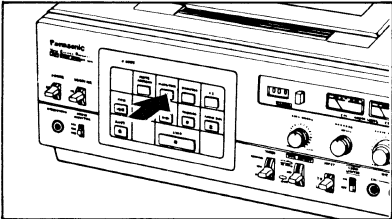


During recording, the Pause Button may be pushed to instantly stop the recording in order to avoid recording unwanted material, commercial material, etc.

Push the Pause Button again to release pause. If not, the unit will automatically release after approx. 5 minutes, and go into the stop mode, to protect the tape.

STILL PICTURE, FRAME-BY-FRAME ADVANCE, SLOW-FAST MOTION AND DOUBLE SPEED

■ STILL PICTURE

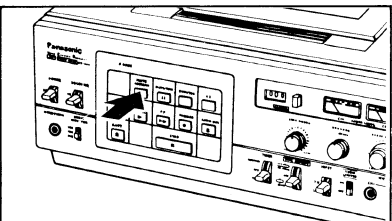


During playback, when the Pause Button is pushed, the tape stops, and a still picture appears. The unit will automatically adjust itself for a clean still picture and then hold.

Notes:

- Depending upon the type of TV set connected with this set, vertical "jitter" of still pictures may occur. This can be corrected by using Vertical Lock Adjusters Sub and Main, located on the rear panel of this unit.
(Refer to page 6, "OPERATING COMPONENTS AND THEIR FUNCTIONS".)
- On some televisions this picture will not be reproduced correctly due to the circuitry of the television.
- If the Pause Button is pushed during audio dubbing, "noise" will be seen in the still picture, but this is not a malfunction.

■ FRAME ADVANCE

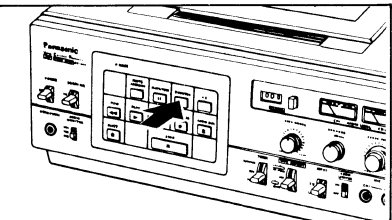


When viewing a still picture, a frame-by-frame advance can be obtained by pushing the One-Shot Frame Advance Button.

Note:

The still picture may appear to vibrate at portions where a normal picture indicates fast motion.

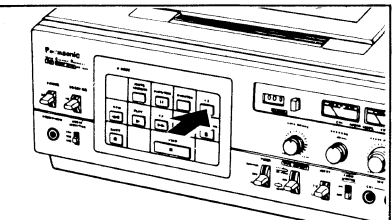
■ SLOW-FAST MOTION



To obtain a slow-fast motion playback picture, push the Slow-Fast Button.

The slow-fast motion speed can be varied from 1/5 to 1.5 times normal by adjusting the Play Speed Control.

■ DOUBLE SPEED



When the Double Speed Button is pushed, a double speed playback picture will appear on the screen.

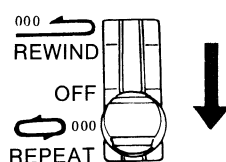
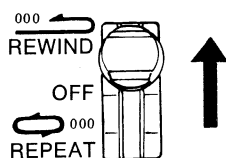
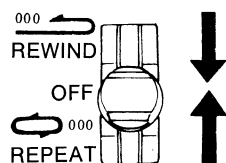
Note:

In some cases, a noise bar may appear on the screen. If this happens, turn the Tracking Control slowly until the best picture is obtained.

During double-speed playback, the audio will also be played back at double speed, and the sound will be practically unintelligible.

DESCRIPTION OF SPECIAL FUNCTIONS

— HOW TO USE THE TAPE MEMORY SWITCH —



The tape memory switch can be used to automatically stop tape rewinding at the place where the tape counter digits read "999", or repeat the playback between the beginning of the tape and the place where the tape counter digits read "000".

• OFF

For normal operation, set the Tape Memory Switch to "OFF".

• REWIND

If there is a place during recording or playback at which you want to start playback once again, press the Tape Counter Reset Button to set it to "000" and set to the "REWIND" position. Then, when the tape is rewound by pushing the Rewind Button after playback has finished, the tape will stop when it reaches this designated position (999). The tape can then be played back.

• REPEAT

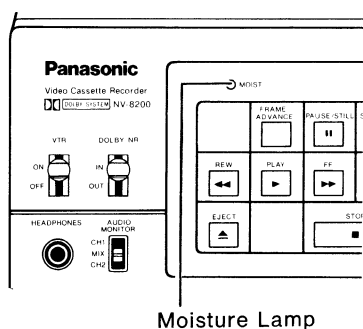
If it is desired to watch the program repeatedly, set the Tape Memory Switch to the "REPEAT" position. Press the Tape Counter Reset Button to "000" at the last point of the program where you want to repeat playback automatically.

Then push the Rewind Button. The tape will then automatically repeat.

Note:

When the Repeat Playback system is used, the Tape Counter may vary from the "000" position by $\pm 5 \sim 8$ seconds for each repeat playback. It is recommended, therefore, that a check be made occasionally if repeat playback operation is to be continued for a long period of time.

— MOIST DETECTOR —

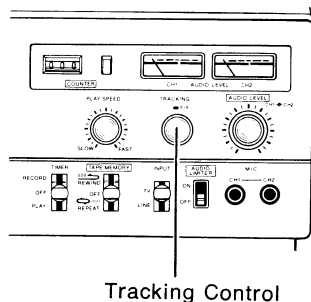


If the recorder has been stored in a very cool place for some time and is then used in a warm environment, there exists the possibility of condensation forming on parts of the recorder. Moisture inside the recorder or on the tape can be very harmful.

To help guard against any moisture damage, the recorder utilizes a moist sensor.

If any condensation occurs, the recorder will not operate and the Moisture Lamp will come on. If this happens, leave the recorder on and let it remain at room temperature until the Moisture Lamp no longer lights. Then proceed with operation.

— HOW TO USE THE TRACKING CONTROL —



The Tracking Control is normally left in the "FIX" position. If a particular playback picture becomes very noisy or streaked, turn the Tracking Control slowly in either direction until the picture is again clear. It is recommended to place the Tracking Control back into the "FIX" position when playback of that particular tape is finished.

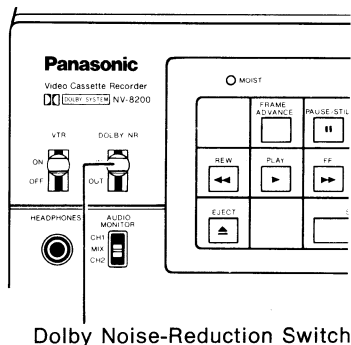


Good Picture



Noisy Picture

— DOLBY NOISE-REDUCTION SWITCH —

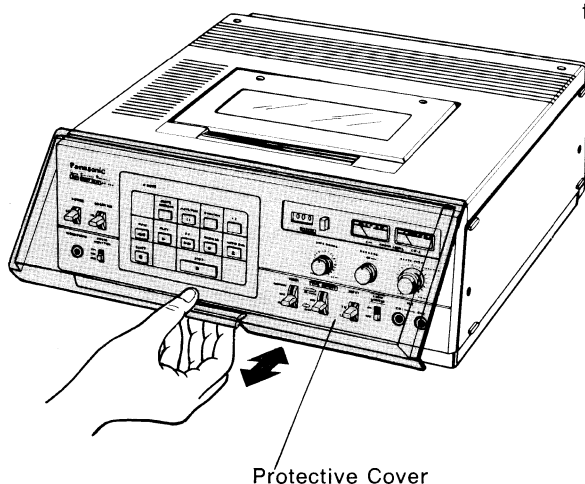


When this switch is turned on during recording or playback, the audio noise-reduction circuitry will function to reduce unwanted noise in the recording or playback signal.

Note:

Tapes recorded with the Dolby Noise-Reduction Switch "IN" should also be played back with the switch "IN".

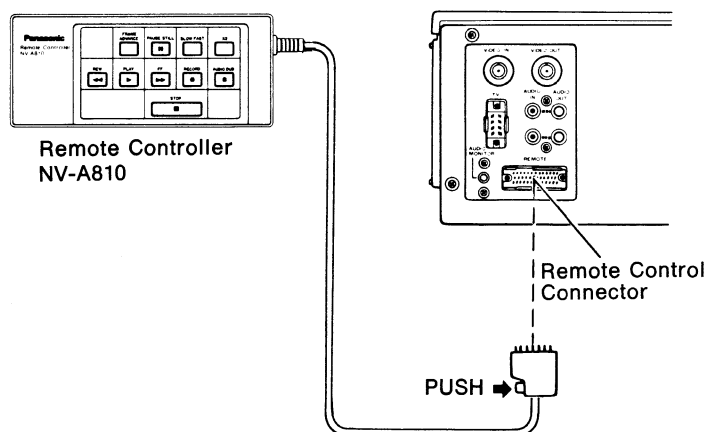
— PROTECTIVE COVER —



The protective cover supplied as a standard accessory may be simply installed or removed as shown in the illustration because the cover is equipped with a grip at its bottom.

USING THE OPTIONAL ACCESSORIES

■ USING THE REMOTE CONTROLLER NV-A810



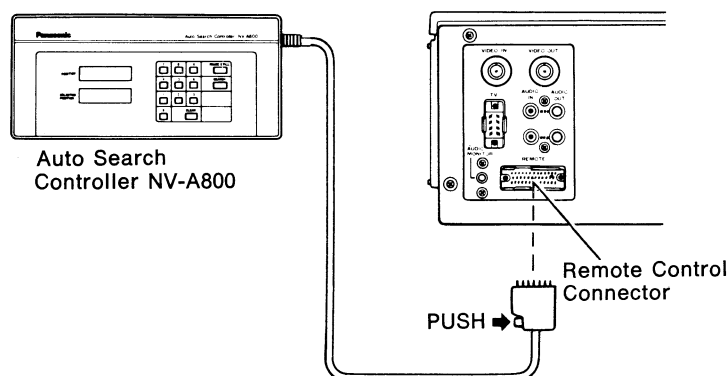
If the optional remote controller NV-A810 is connected to the Remote Control Connector, record, playback, fast forward, rewind, audio dub, stop, pause, one-shot frame advance, slow-fast motion and double speed playback modes can be performed from a distance.

This controller functions in the same manner as the push-buttons on the unit.

Notes:

- Pause must be pushed once again to release pause.
- The controls on the recorder can still be used even when the NV-A810 is connected.
- When the recorder is paused during a recording, the exact point of the pause may produce a momentary disturbance of the picture during playback. This effect, if it occurs, is normal.

■ USING THE AUTO SEARCH CONTROLLER NV-A800



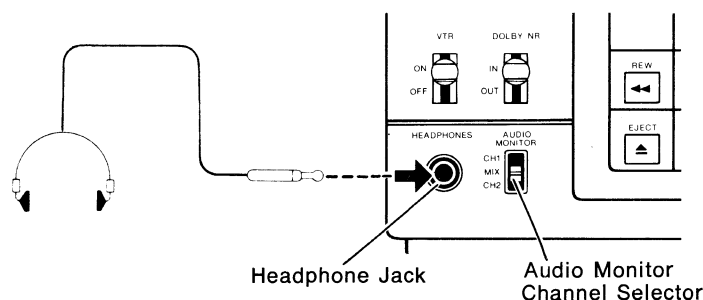
If the optional auto search controller NV-A800 is connected to the Remote Control Connector, you can easily find the desired programme during playback.

By pushing the numerical buttons, select the spot of the programme you want to play back. Then push the search/play button and playback will automatically commence from the point you have selected. For details, read the Operating Instructions of the NV-A800.

Notes:

- If the auto search controller is used, check to be sure that the Timer and Tape Memory Switches are in the "OFF" position.
- If the auto search controller is used too close to the TV set used for tape playback and the TV power is turned on or off, the operation may not be normal.

■ USING A HEADPHONE



Insert the headphone plug into the Headphone Jack. The headphone permits listening to audio Channel 1 or Channel 2 or both Channels in stereo by setting the Audio Output Channel Selector.

FUNCTIONAL CHART FOR AUDIO

Setting of Audio Monitor Channel Selector	Audio Monitor Output Jack RF Output Connector	Headphone Jack	Audio Output Jacks Channel 1 Channel 2
CH1	Audio from channel 1 only	Audio from channel 1 only	Both audio signals not affected by selector setting
MIX	Sound from both channels will be mixed	(Not mixed) STEREO Channel 1...Left Channel 2...Right	
CH2	Audio from channel 2 only	Audio from channel 2 only	

■ SIMPLE EDITING

"Assemble editing" permits you to add programme material to the end of a previously recorded portion, thus making one continuous, uninterrupted programme from two programmes. Video and audio ch1 and ch2 are edited at the same time.

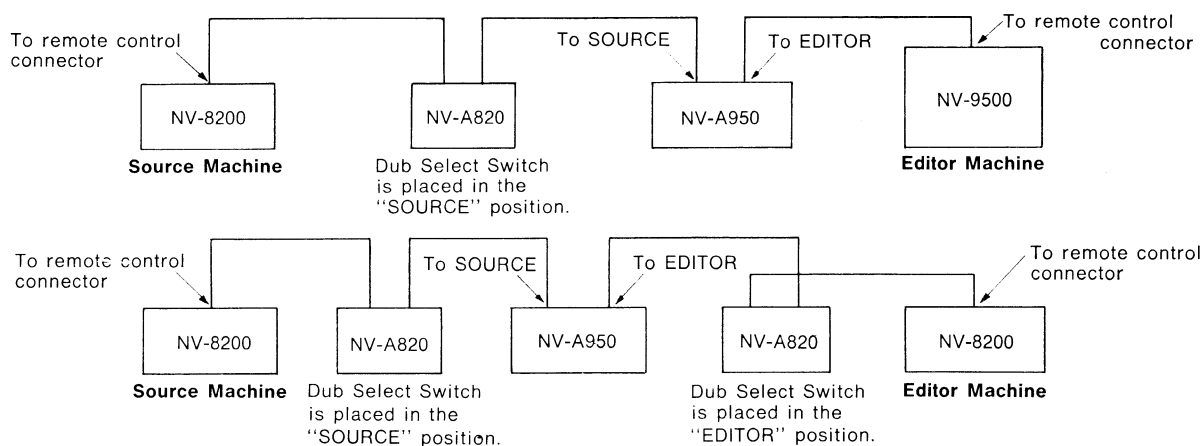
The NV-8200 itself is not capable of performing true edits. However, either by using the interface adaptor NV-A820 or direct connection as shown "assemble editing" can be performed.

There are 2 basic ways that the unit can be used. Either as an editor machine or a source machine.

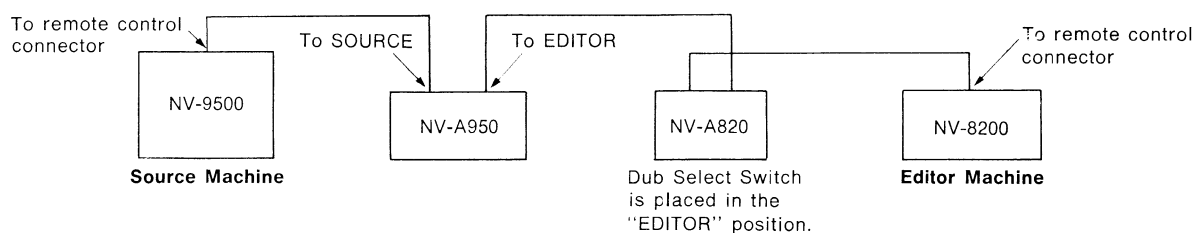
For details, read the relevant Operating Instructions.

■ USING THE INTERFACE ADAPTOR NV-A810

• When the unit is being used as a SOURCE machine.



• When the unit is being used as an EDITING machine.

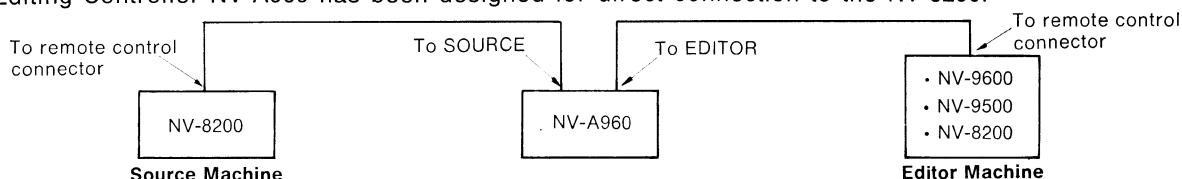


Notes:

- When the unit is used as an EDITOR machine, rehearsals can not be made.
- When the unit is used as an EDITOR machine, some interference may be noticed on the TV screen at the edit point.

■ BY DIRECT CONNECTION

The Editing Controller NV-A960 has been designed for direct connection to the NV-8200.



Notes when using the NV-9500 for editor

- Be sure to change over the INSERT SELECT SW (CH 1, CH 2, and VIDEO) in the same way as the insert mode which is selected at the controller side.
- After the editing process has been completed, REVIEW, RETURN and Go-To operations cannot be functioned.

Notes when using the NV-8200 for editor

- Only assemble editing is possible.
- When PREVIEW and EDIT-START buttons are pressed, the monitor connected to the editor (NV-8200) will show the E-E picture (the signal from the playback/source machine). However, the Editor will not begin recording until the selected edit point is reached. But this is a normal.
- A slight "colour beat" will be noticeable upon playback of the edited point, but this is a normal.

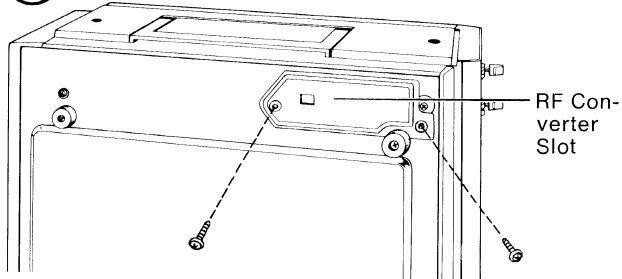
■ RF CONVERTER (OPTIONAL ACCESSORY)

An RF converter (optional accessory NV-8200-E: ENC-17319-1, NV-8200-B: ENC-17318-1, NV-8200-A: ENC-17210) will allow you to play back VHS signals into your TV receiver.

For this purpose those signals can be viewed through an unused broadcast channel.

If you want to use the RF converter (optional accessory), the monitoring from the video camera, audio player or the microphone, or the playing back of the recorded tape (included the timer playback) can be made.

①



INSERTION

- ① Remove the screws by using a screwdriver as shown in the illustration.
- ② Insert the RF converter into the converter slot as shown in the illustration.
- ③ Retighten the screws after the converter has been inserted.

RF CONVERTER CHANNEL

Model NV-8200-E and -B

- The NV-8200 RF converter channel is preadjusted for your convenience to UHF 36 (± 3) channel.

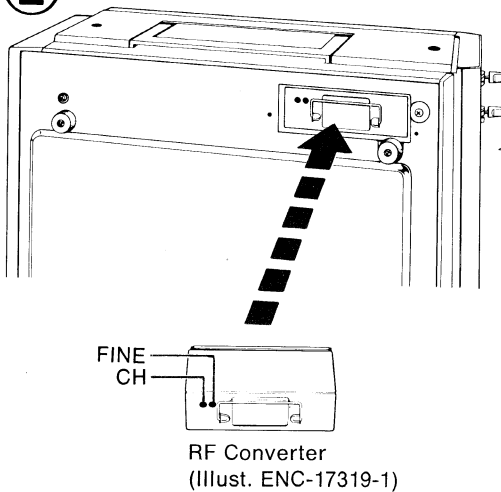
Model NV-8200-A

- The NV-8200 RF converter channel is preadjusted for your convenience to VHF channel 1.

If the playback picture shows a patterning interference effect, it may be that the RF converter playback channel requires careful adjustment.

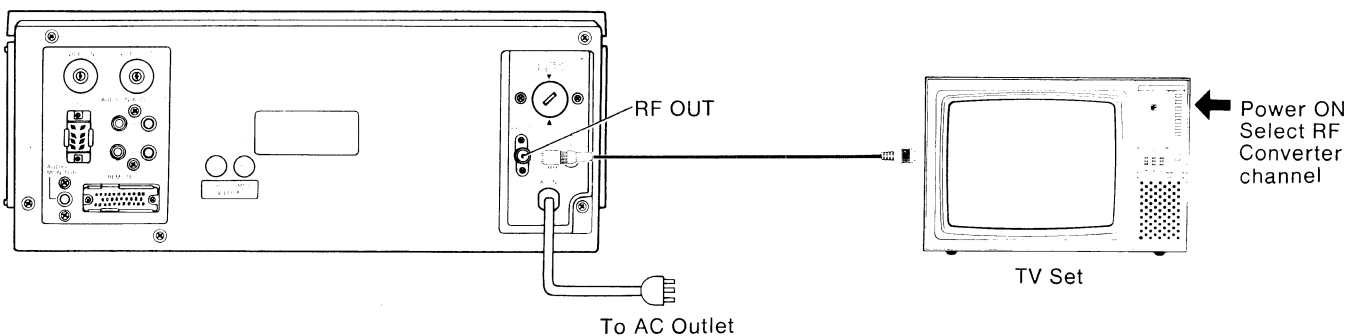
Due to the delicate nature of this adjustment it should be undertaken by your dealer.

②



CONNECTION DIAGRAM

Connect the NV-8200 to the TV receiver as follows:



VIDEO HEAD CLOGGING

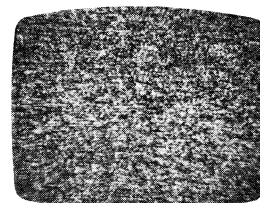
The video heads are the means by which the recorder places pictures on the tape during recording, and reads pictures from the tape during playback.

In the unlikely event that they become dirty enough to be clogged, no picture will be recorded or played back. This can easily be determined if, during playback of a known good tape, there is good sound, but no picture (picture is extremely snowy).

If this is the case, have the recorder checked by qualified service personnel.



Good Picture

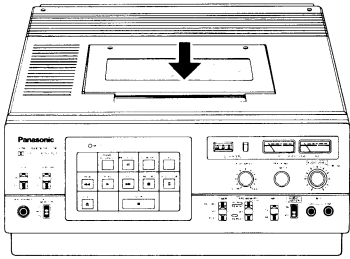
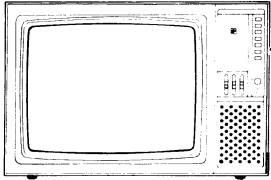
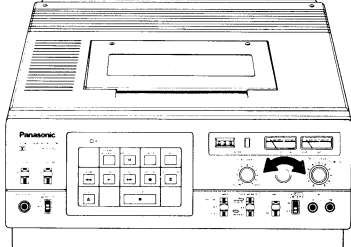
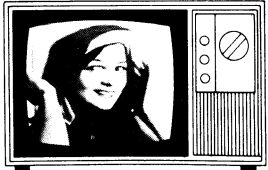


Snowy Picture

BEFORE REQUESTING SERVICE

...Check the following points once again.

Condition	Main cause and remedy	
If there is no power to the unit...	Is the plug disconnected?	
If the video cassette can't be inserted...	- Is it being inserted in the wrong way? - The video cassette can only be inserted with window side up and safety tab facing you.	
If no operation starts, when operation buttons are pushed...	Is the Moisture Lamp on? See page 19.	
If no operation starts, when the Record Button or Audio Dubbing Button is pushed...	- Has a video cassette been inserted? - Is the small tab on the back of the video cassette still intact?	

Condition	Main cause and remedy	
If tape can't be rewound...	Is the tape already completely rewound?	
If there is no playback picture with RF converter...	Has the TV receiver been tuned to the RF converter channel of the VHS? See page 23.	 TV Set
If the playback image is noisy or contains streaks...	Turn the tracking control. See page 20.	
If there is no colour in the playback image...	- Was the programme broadcast in black and white? - Is the fine-tuning adjustment of the TV correct?	
Does the top of your playback picture wave back and forth excessively?	Locate the horizontal hold control on your TV set. Turn it slowly to correct for the wavy picture.	 Adjust horizontal hold

Refer servicing to qualified service personnel.

SPECIFICATIONS

NV-8200-E
NV-8200-B
NV-8200-A

Power Source:	100–110/115–127/200–220/230–250 V AC, 50/60 Hz		
Power Consumption:	Approx. 45 watts		
Television System:	CCIR: 625 lines, 50 fields, PAL colour signal		
Video Recording System:	2 rotary heads, helical scanning system		
	Luminance: FM azimuth recording		
	Colour signal: converted subcarrier phase shift recording		
Audio Track:	2 tracks		
Tape Format:	Tape width 12.7 mm, high density tape		
Tape Speed:	23.39 mm/s (Normal)		
Record/Playback Time:	240 min. with NV-E240		
FF/REW Time:	Less than 6.0 min. with NV-E240		
Heads:	Video: 2 rotary heads		
	Audio/Control: 1 stationary head		
	Erase: 1 full track erase		
	1 audio track erase for audio dubbing		
Input Level:	Video: TV Monitor connector (8 pins)	1.0Vp-p,	75 Ω unbalanced
	VIDEO IN connector (BNC)	1.0Vp-p,	75 Ω unbalanced
	Audio: TV Monitor connector (8 pins)	–20 dB,	100k Ω unbalanced
	MIC IN jack $\times$ 2	–70 dB,	600 Ω unbalanced
Output Level:	LINE IN jack (RCA) $\times$ 2	–20 dB,	100k Ω unbalanced
	Video: TV Monitor connector (8 pins)	1.0Vp-p,	75 Ω unbalanced
	VIDEO OUT connector (BNC)	1.0Vp-p,	75 Ω unbalanced
	Audio: TV Monitor connector (8 pins)	0 dB,	5k Ω unbalanced
	LINE OUT jack (RCA) $\times$ 2	–6 dB,	600 Ω unbalanced
	AUDIO MONITOR OUT jack (RCA)	0 dB,	5k Ω unbalanced
	HEADPHONE jack	–32 dB,	8 Ω unbalanced
	RF Modulated:		
	NV-8200-E, –B: UHF channel 36		75 Ω unbalanced
	NV-8200-A: VHF channel 0 or channel 1		75 Ω unbalanced
Video Horizontal Resolution:	Colour: more than 240 lines		
(on monoscope test pattern)	B/W: more than 300 lines		
Audio Frequency Response:	80~10,000 Hz		
Signal-to-Noise Ratio:	Video: better than 43 dB		
	(Rohde & Schwarz noise meter)		
	Audio: better than 45 dB		
Operating Temperature:	5°C~40°C		
Operating Humidity:	35%~80%		
Weight:	15.5 kg		
Dimensions:	382(W) $\times$ 156(H) $\times$ 382(D) mm		
Accessories Supplied:	1 pc. Video cassette tape, NV-E120		
	1 pc. VTR-monitor connection cable, VJA54S-1		
	1 pc. Protective cover, VYF0154		
	1 pc. Dust cover, VYC0041		
Optional Accessories:	1/2" video cassette tape: NV-E240 Approx. 334m, 240 min.		
	NV-E180 Approx. 258m, 180 min.		
	NV-E120 Approx. 174m, 120 min.		
	NV-E60 Approx. 88m, 60 min.		
	Carrying case, NV-H80		
	Remote controller, NV-A810 Approx. 3m		
	Auto search controller, NV-A800 Approx. 2m		
	Interface adaptor, NV-A820		
	RF converter: NV-8200-E, ENC-17319-1, UHF channel 36 ($\pm$ 3)		
	NV-8200-B, ENC-17318-1, UHF channel 36 ($\pm$ 3)		
	NV-8200-A, ENC-17210, VHF channel 0 or 1		
	Antenna selector, VSQ0094		

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

* Noise reduction system manufactured under license from Dolby Laboratories.

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